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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte PAUL G. WILSON,
STANLEY W. JOYNER and TERRY L. STUMPF

Appeal 2008-5750
Application 09/735,542¹
Technology Center 2400

Decided:² March 17, 2009

Before MAHSHID D. SAADAT, JOHN A. JEFFERY,
and MARC S. HOFF, *Administrative Patent Judges*.

HOFF, *Administrative Patent Judge*.

DECISION ON APPEAL

¹ The real party in interest is Nortel Networks Limited.

² The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

STATEMENT OF CASE

Appellants appeal under 35 U.S.C. § 134 from a non-final Rejection of claims 1, 3, 4, 6, 9-20, and 22-31.³ We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

Appellants' invention relates to a multi-service gateway that affords a significant increase in the proportion of usable packet-switched ports (Spec. 4). A resource management algorithm allocates packet-switched resources to the packet-switched ports in accordance with the priority of the connection request, the usage level of the resource pool, and an occupancy threshold (*Id.*). A connection request will be granted if the usage level of the pool is below an occupancy threshold (Spec. 6). If the usage level of the pool is not below the occupancy threshold, the connection request will be satisfied only if the priority level of the connection request is higher than a pre-determined level (*Id.*).

Claim 1 is exemplary:

1. A method of processing a request for a connection through a multi-service gateway comprising:

determining a usage level of a resource pool; and

determining a priority level of the connection request,

if the usage level is below a pool occupancy threshold that is a function of the priority level of the connection request, allocating resources from the resource pool to satisfy the connection request;

³ Claims 2, 5, 7, 8, and 21 are cancelled.

if the usage level is not below the occupancy threshold, allocating resources from the resource pool to satisfy the connection request only if the priority level of the connection request is higher than a priority threshold.

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Shaffer	US 6,516,059 B1	Feb. 4, 2003
Schunk	US 6,980,515 B1	Dec. 27, 2005

Claims 1, 3, 4, 6, 9-17, 19, 20, 22, 26, 27, and 29-31 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Schunk.

Claims 18, 23-25, and 28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Schunk in view of Shaffer.

Rather than repeat the arguments of Appellants or the Examiner, we make reference to the Appeal Brief (filed August 31, 2007) and the Examiner's Answer (mailed December 11, 2007) for their respective details.

ISSUE

Appellants assert that Schunk does not teach providing resources required by a connection request if the usage level of a resource pool is not below a usage threshold, and that in Schunk, such a request is always rejected, which is not the case in the claimed invention (Br. 8). The Examiner maintains that Schunk teaches both satisfying a connection request if resource pool usage is below a threshold, and if resource pool usage is not below a threshold, satisfying the connection request if the request is higher than a priority threshold (Ans. 3-4).

The respective contentions thus present us with the following issue:

Did Appellants show that the Examiner erred in finding that Schunk teaches (a) allocating resources to satisfy a connection request if the usage level of a resource pool is below a pool occupancy threshold, and (b) if the usage level is not below the occupancy threshold, allocating resources from the resource pool to satisfy the connection request only if the priority level of the connection request is higher than a priority threshold?

FINDINGS OF FACT

The following Findings of Fact (FF) are shown by a preponderance of the evidence.

The Invention

1. According to Appellants, the invention concerns a multi-service gateway that affords a significant increase in the proportion of usable packet-switched ports (Spec. 4).

Schunk

2. Schunk teaches a multi-service network switch that provides tiered access to the Internet by defining quality of access (QoA) levels to each incoming connection request (col. 1, l. 66 – col. 2, l. 6; col. 15, ll. 37-38).

3. An access threshold is associated with each QoA level (col. 15, l. 61). The access threshold indicates a maximum number of resources (modems, in Schunk) that may be in use before a resource is allocated to a connection request (col. 15, ll. 65-67).

4. If resource utilization exceeds the access threshold corresponding to the user's QoA level, the connection request is refused (col. 15, l. 67 – col. 16, l. 2).

Shaffer

5. Shaffer teaches allocating resources in a network environment in which there is redundant capability in implementing the call-related tasks (col. 1, ll. 6-10).

PRINCIPLES OF LAW

“A rejection for anticipation under section 102 requires that each and every limitation of the claimed invention be disclosed in a single prior art reference.” *See In re Buszard*, 504 F.3d 1364, 1366 (Fed. Cir. 2007) (quoting *In re Paulsen*, 30 F.3d 1475, 1478-79 (Fed. Cir. 1994)). “Anticipation of a patent claim requires a finding that the claim at issue ‘reads on’ a prior art reference.” *Atlas Powder Co. v. IRECO, Inc.*, 190 F.3d 1342, 1346 (Fed. Cir. 1999) (*quoting Titanium Metals Corp. v. Banner*, 778 F.2d 775, 781 (Fed. Cir. 1985)).

Analysis of whether a claim is patentable over the prior art under 35 U.S.C. § 102 begins with a determination of the scope of the claim. We determine the scope of the claims in patent applications not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction in light of the specification as it would be interpreted by one of ordinary skill in the art. *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004). The properly interpreted claim must then be compared with the prior art.

“Section 103 forbids issuance of a patent when ‘the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.’” *KSR Int’l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1734 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, (3) the level of skill in the art, and (4) where in evidence, so-called secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966). See also *KSR*, 127 S. Ct. at 1734 (“While the sequence of these questions might be reordered in any particular case, the [*Graham*] factors continue to define the inquiry that controls.”)

In *KSR*, the Supreme Court emphasized “the need for caution in granting a patent based on the combination of elements found in the prior art,” *id.* at 1739, and discussed circumstances in which a patent might be determined to be obvious. In particular, the Supreme Court emphasized that “the principles laid down in *Graham* reaffirmed the ‘functional approach’ of *Hotchkiss*, 11 How. 248.” *KSR*, 127 S. Ct. at 1739 (citing *Graham v. John Deere Co.*, 383 U.S. 1, 12 (1966) (emphasis added)), and reaffirmed principles based on its precedent that “[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *Id.* The Court explained:

When a work is available in one form of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103

likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.

Id. at 1740. The operative question in this “functional approach” is thus “whether the improvement is more than the predictable use of prior art elements according to their established functions.” *Id.*

ANALYSIS

Claims 1, 3, 4, 6, 9-17, 19, 20, 22, 26, 27, and 29-31

Each of the pending independent claims (claims 1, 20, 29, 30, and 31) recites, in the context of a multi-service gateway, (a) allocating resources from a resource pool to satisfy a connection request if the usage level of the pool is below an occupancy threshold, and (b) in the event the usage level of the resource pool is *not* below the occupancy threshold, allocating resources from the pool to satisfy the connection request, nevertheless, if the priority level of the connection request is higher than a priority threshold. Each independent claim thus recites two successive tests to determine whether a connection request will be satisfied; even if a request fails under the “resource pool occupancy” test, that request may yet succeed under the subsequent “priority level” test.

The Examiner’s applied prior art, Schunk, assigns quality of access (QoA) service levels to incoming connection requests (FF 2). An access threshold is associated with each QoA level (FF 3). The access threshold indicates a maximum number of resources (modems, in Schunk) that may be in use before a resource is allocated to a connection request (FF 3). If

resource utilization exceeds the access threshold corresponding to the user's QoA level, the connection request is refused (FF 4).

Neither the Examiner's explanation of the rejection, nor his response to Appellants' arguments, articulates how Schunk teaches *two* tests in response to a connection request. With reference to the "resource pool occupancy" limitation, the Examiner refers the reader to column 18, lines 53-61 of Schunk (Ans. 4). This section of Schunk is directed only to updating a count of available resources when a call is terminated, and contains no teaching directed to satisfying a connection request if sufficient resources are available in the resource pool.⁴ The Examiner's citation of Figs. 13 and 15, and of columns 15 and 17 of Schunk, does properly indicate teachings in Schunk that correspond to the claimed priority threshold testing.⁵ The Examiner, however, fails to explain where the predicate to the priority threshold testing, i.e., "if the usage level is not below the occupancy threshold," is taught in Schunk, and we can find no such teaching.

As discussed *supra*, Schunk teaches *one* decision process, which compares an access threshold based on an assigned QoA level to the current resource utilization level, to determine whether a connection request will be allocated resources. Because Schunk does not teach a first resource allocation decision dependent on a resource usage level, followed by a second resource allocation decision dependent on a connection request's priority level, Appellants have shown error in the Examiner's rejection of

⁴ The Examiner does not address this section of the claim at all in his Response to Arguments.

⁵ In our view, Schunk's connection decision process based on quality of access level would properly read on *either* the resource pool occupancy threshold element *or* the priority threshold element of Appellants' claims.

independent claims 1, 20, and 29-31, as well as claims 3, 4, 6, 9-17, and 19 dependent from claim 1, and claims 22, 26, and 27 dependent from claim 20. We therefore reverse the rejection of these claims under 35 U.S.C. § 102.

Claims 18, 23-25, and 28

Appellants argue that claims 18, 23-25, and 28 are patentable over the asserted combination of Schunk and Shaffer because respective independent claims 1 and 20 define over Schunk, and because Shaffer does not meet the limitations deemed to be absent from Schunk. We have reviewed Shaffer and we agree with Appellants that it does not teach the limitations deemed missing from Schunk, as explained *supra*.

We therefore reverse the Examiner's rejection of claims 18, 23-25, and 28 under 35 U.S.C. § 103, for the same reasons expressed with respect to the § 102 rejection of parent claims 1 and 20, *supra*.

CONCLUSIONS OF LAW

Appellants have shown that the Examiner erred in finding that Schunk teaches (a) allocating resources to satisfy a connection request if the usage level of a resource pool is below a pool occupancy threshold, and (b) if the usage level is not below the occupancy threshold, allocating resources from the resource pool to satisfy the connection request only if the priority level of the connection request is higher than a priority threshold.

ORDER

The Examiner's rejection of claims 1, 3, 4, 6, 9-20, and 22-31 is reversed.

REVERSED

KIS

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